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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

REPORT OF PINE BEETLE SURVEYS ON THE WALLOWA NATIONAL FOREST SEASON OF 1941

By

W. J. Buckhorn
Senior Scientific Aide
Bureau of Entomology and Plant Quarantine

March 1943

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon

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REPORT OF PINE BEETLE SURVEYS

ON THE

WALLOWA NATIONAL FOREST

SEASON OF 1941

Approved by

F. P. Keen
Senior Entomologist

Submitted by

W. J. Buckhorn
Senior Scientific Aide

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon
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ABSTRACT

Basis

Data presented are from the fifth (1941) annual pine beetle survey.

Status of Infestation

The average trend was downward in 1940. Losses throughout the forest were normal and reached the very low average of 26 board feet per acre on the check plots. A partial survey in 1941 indicated a still further reduction of loss. No estimate is available for 1942.

Estimated Forest Losses

Season of loss	No. of trees	Volume M.B.M.	Board Ft. Per Acre	Percent of Stand
1940	7,613	4,338	10	.23
1941	5,192	3,299	8	.18

Recommendations

No direct control measures were necessary in 1941. Resumption of the annual survey, discontinued in 1942 for financial reasons, is recommended.

Introduction

The fifth annual pine beetle survey in ponderosa pine stands within and adjacent to the Wallowa National Forest was completed during the period November 11 - 13, 1941. Lack of funds prevented carrying out of a similar survey on the forest during 1942. In 1941, as in preceding years, the pine beetle survey was conducted cooperatively by the Forest Service and the Bureau of Entomology and Plant Quarantine.

The 1941 survey consisted of a 100 percent cruise of current beetle losses on three semi-permanent 320-acre check plots that have been established since 1937. Information obtained completed the 1940 loss data on the plots and provided preliminary information on the 1941 infestation trend. These plot data supplemented by previous loss records were the basis upon which estimates of losses occurring during 1940 and 1941 were made for the forest as a whole.

The 1941 survey was carried out by Messers. W. V. Mason, E. Sutherland, and B. Fielder. They were trained and supervised by Mr. A. J. Jaenicke of the Forest Service.

Past Losses

Climatic conditions unfavorable to tree growth enabled a quiescent infestation of the western pine beetle to assume an upward trend about 1930. Infestation increased rapidly and by 1932 had become epidemic on portions of the forest. This upward trend was halted during the winter of 1932-33 by extreme subzero temperatures that caused widespread mortality to overwintering pine beetle broods. Conditions became more favorable for tree growth and the infestation continued to decline until a low point was reached in 1936. Infestation increased considerably during 1937 and 1938 but declined abruptly in 1939. For more detailed infromation on past losses refer to two previously issued office reports covering the period of 193701938 and the individual year of 1939.

Plot Losses, 1940-1941

The infestation trend continued downward during 1940. Plot losses averaged 26 board feet per acre, or 0.22 percent of stand, which marks the lowest ebb of infestation since the epidemic began.

Past experience indicates that approximately 87 percent of the 1941 loss was perceptible at the time of survey. On that basis the total 1941 losses on the plots were estimated. These estimated losses indicate the infestation probably continued to decline somewhat during 1941.

Location of the three plots covered during the 1941 survey are shown in Figure 1. Individual plot data secured on this survey are presented in Table 1.

General Infestation Conditions, 1940-1941

Insect-caused losses over the forest during 1940 were at an extremely low ebb. In that year, as in 1939, very little infestation existed at the higher elevations and the areas of normal infestation at the lower elevations decreased to some extent. No aggressive centers of infestation were present on the forest. Indications were that this favorable condition continued in 1941.

Estimates of insect-caused ponderosa pine losses during 1940 and 1941 are presented by units and areas in Table 2. The intensity and distribution of these losses are shown graphically in Figure 1.

Recommendations

No conditions warranting direct control measures existed on the forest in 1941.

Curtailment of survey funds in 1942 made it necessary to concentrate upon areas of greatest hazard. In as much as infestation on the Wallowa was the lowest in Region 6 during 1941, this forest was not surveyed in 1942. Therefore, the current situation is not known, although it is assumed from observations on other forests of the Blue Mountains that no serious situation exists. Resumption of the annual survey to guard against unsuspected outbreaks is recommended.

Table No. 1

Hallows — Insect-Caused Ponderosa Pine Losses on Virgin Check Plots

Area And Units	Check Plots			1940 Losses					1941 Losses				
				No. of Trees	Board Feet				No. of Trees	Board Feet			
	Plots	Timbered Acreage	Pine Vol. Bd. Ft. as of Jan. 1, 1940		Volume	Per Acre	% of Stand	Ratio to 1939		Volume	Per Acre	% of Stand	Ratio to 1940
GRANDE RONDE													
Sled Springs	Crow Creek	270	3,838,950	19	12,780	47	.33	.43	*8	6,070	23	.16	.47
Chesnimnus	Chico	200	2,107,660	5	1,090	5	.05	1.96	*6	4,090	20	.20	3.75
Area Total		470	5,946,610	24	13,870	19	.23	.46	*14	10,160	22	.17	.73
IMNAHA													
Imnaha	Morgan Butte	320	3,380,415	2	6,540	20	.20	4.67	*3	9,000	28	.27	1.38
FOREST TOTAL		790	9,327,025	26	20,410	26	.22	.65	17	19,160	25	.21	.96

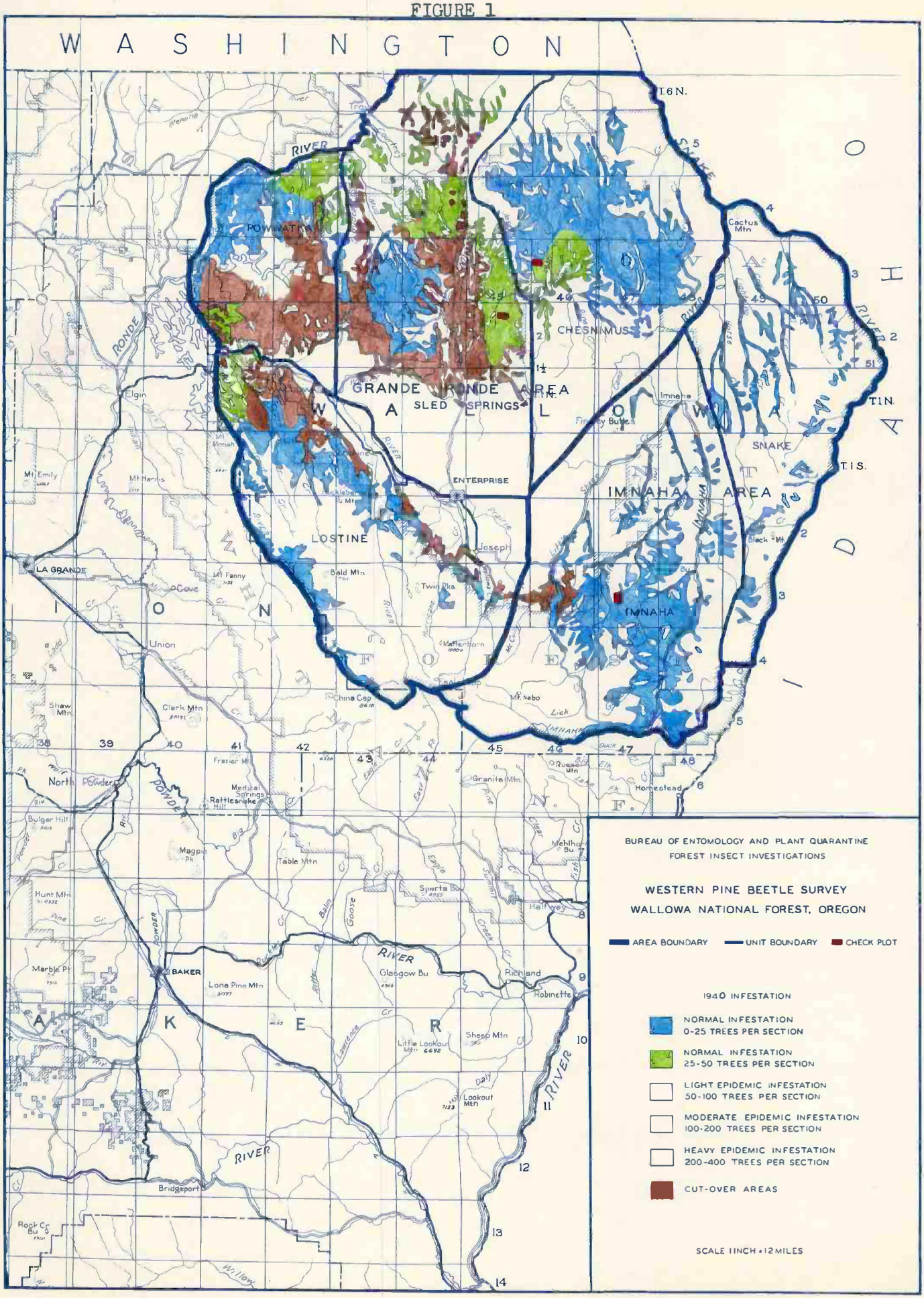
* Plots not cruised in 1942. Estimate of total loss based on that portion of the seasons loss marked on the survey of 1941.

Table No. 2

Wallowa — Insect Caused Ponderosa Pine Mortality

Area And Unit	Pine Type Acres: Virgin	Pine Type Acres: Cutover	Pine Type Acres: Total	Total Volume M.B.M. Jan. 1, 1940	Estimated 1940 Loss: Trees	Estimated 1940 Loss: Volume M.B.M.	Estimated 1940 Loss: Trees Per Sec.	Estimated 1940 Loss: Bd.Ft. Per Acre	Estimated 1940 Loss: % of Stand	Estimated 1941 Loss: Trees	Estimated 1941 Loss: Volume M.B.M.	Estimated 1941 Loss: Trees Per Sec.	Estimated 1941 Loss: Bd.Ft. Per Acre	Estimated 1941 Loss: % of Stand
GRANDE RONDE														
Powwatka	32,560	33,080	65,640	247,100	1,510	776	15	12	.32	864	518	8	8	.22
Sled Springs	36,540	59,120	95,660	424,500	2,425	1,520	16	16	.36	1,520	1,140	10	12	.28
Chesnimnus	99,040	—	99,040	515,800	1,716	1,030	11	10	.20	1,545	928	10	9	.18
Lostine	28,600	21,380	49,980	277,400	1,402	690	18	14	.25	891	490	11	10	.18
Area Total	196,740	113,580	310,320	1,464,800	7,053	4,016	15	13	.28	4,820	3,076	10	10	.21
IMNAHA														
Imnaha	81,540	3,840	85,380	331,700	440	250	3	3	.08	277	166	2	2	.05
Snake	31,620	—	31,620	71,000	120	72	2	2	.10	95	57	2	2	.08
Area Total	113,160	3,840	117,000	402,700	560	322	3	3	.08	372	223	2	2	.06
FOREST TOTAL	309,900	117,420	427,320	1,867,500	7,613	4,338	11	10	.23	5,192	3,299	8	8	.18

FIGURE 1


WASHINGTON
OREGON
IDAHO
RIVER
POWDER
GRANDE RONDE AREA
WALLOWA
SLED SPRINGS
IMNAHA AREA
IMNAHA
ENTERPRISE
LOSTINE
JOSEPH
LA GRANDE
UNION
BAKER
NORTH POWDER
MEDICAL SPRINGS
RATTLESNAKE
HALFWAY
RICHLAND
ROBINETTE
HOMESTEAD
IMNAHA
SNAKE
CHESNIMUS
Elgin
Cactus Mtn
Mt Emily
Mt Fanny
Bald Mtn
Twin Pks
Matterhorn
China Cap
Mt Nebo
Shaw Mtn
Clark Mtn
Frazier Mt
Granite Mtn
Russell Mtn
Bulger Hill
Magpie Pk
Table Mtn
Hunt Mtn
Sparta Bu
Marble Pt
Lone Pine Mtn
Glasgow Bu
Sheep Mtn
Little Lookout Mtn 6692
Lookout Mtn
Bridgeport
Rock Cr Bu
Willow
Daly
Lawrence Cr
Goose Cr
Eagle Cr
Pine Cr
Elk Cr
Duck Cr
Lick Cr
Summit Cr
Fish Cr
Mehlhorn Bu
Black Mt
Cactus Mtn
T 6 N.
T 1 N.
T 1 S.
R 38 E.
R 39 E.
R 40 E.
R 41 E.
R 42 E.
R 43 E.
R 44 E.
R 45 E.
R 46 E.
R 47 E.
R 48 E.
R 49 E.
R 50 E.
R 51 E.
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS
WESTERN PINE BEETLE SURVEY
WALLOWA NATIONAL FOREST, OREGON
AREA BOUNDARY
UNIT BOUNDARY
CHECK PLOT
1940 INFESTATION
NORMAL INFESTATION
0-25 TREES PER SECTION
NORMAL INFESTATION
25-50 TREES PER SECTION
LIGHT EPIDEMIC INFESTATION
50-100 TREES PER SECTION
MODERATE EPIDEMIC INFESTATION
100-200 TREES PER SECTION
HEAVY EPIDEMIC INFESTATION
200-400 TREES PER SECTION
CUT-OVER AREAS
SCALE 1 INCH = 12 MILES